

CLAIMS

1. A liquid crystal display device comprising:
a polarizing plate;
a pair of substrates at least one of which is
5 transparent;
a pair of electrodes; and
a nematic liquid crystal;
said nematic liquid crystal:
being filled between the pair of substrates;
10 being aligned to be substantially perpendicular
to the substrates when applying a voltage not higher
than a threshold value between the electrodes;
having negative dielectric constant anisotropy;
and
15 undergoing change in tilt angle of alignment with
respect to the substrates in accordance with applied
voltage when applying a voltage not lower than a
threshold value between the electrodes;
said liquid crystal display device:
20 having a voltage range in which a rate of change
in retardation level with respect to temperature
becomes substantially zero; and
displaying red or purple when voltage is applied
at a maximum voltage value in the voltage range.
25 2. The liquid crystal display device according
to claim 1, wherein when voltage is applied at a
maximum voltage value in the voltage range, a color

displayed is present in the region that satisfies two expressions, $x > 0.4$ and $y < 0.45$, in the xy chromaticity coordinates.

3. The liquid crystal display device according to claim 1, which displays blue at a voltage value beyond the voltage range.

4. The liquid crystal display device according to claim 1, which displays green by using a color filter.

5. The liquid crystal display device according to any one of claims 1 to 4, which displays black when no voltage is applied.

6. A method for driving a liquid crystal display device comprising:

a polarizing plate;

a pair of substrates at least one of which is transparent;

a pair of electrodes; and

a nematic liquid crystal;

said nematic liquid crystal:

being filled between the pair of substrates;

being aligned to be substantially perpendicular to the substrates when a voltage not higher than a threshold value is applied across the electrodes;

having negative dielectric constant anisotropy;

and

undergoing change in tilt angle of alignment with

respect to the substrates in accordance with applied voltage when applying a voltage not lower than a threshold value between the electrodes;

- the device further comprising a first pixel
- 5 having a voltage range in which a rate of change in retardation level with respect to temperature becomes substantially zero, and a second pixel provided with a green color filter;

the method comprising the steps of:

- 10 applying voltage at a maximum voltage value in the voltage range when red or purple is displayed;

applying a voltage higher than the maximum voltage value in the voltage range when blue is displayed; and

- 15 applying voltage to the pixel with a green color filter when green is displayed.